

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of: **Hirosuke KAWABATA et al.**

Art Unit: **1787**

Application Number: **10/581,267**

Examiner: **Monique R. Jackson**

Filed: **June 1, 2006**

Confirmation Number: **3159**

For: **IMIDE RESIN, PRODUCTION METHOD OF IMIDE RESIN, AND USAGE OF
IMIDE RESIN**

Attorney Docket Number: **062455**

Customer Number: **38834**

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop: AF

September 22, 2011

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

Applicant requests review of the Final Office Action dated June 9, 2011 in the above-identified application.

A Notice of Appeal in compliance with 37 C.F.R. §41.31 is concurrently filed herewith. An Extension of Time is also concurrently filed herewith. No amendments are being filed with this request.

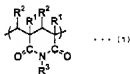
The review is requested for the reasons stated on the attached sheets.

REMARKS

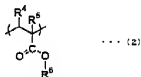
Claims 27-33, 57 and 59 were rejected under 35 U.S.C. §103(a) as allegedly being obvious by Yano et al. (WO 03/085424) (hereinafter Yano) in view of JP2-153904 (hereinafter JP '904). Applicants respectfully traverse this rejection.

The presently claimed polarizer-protective film, as recited in claim 27 of the present application, includes the following Features a to c:

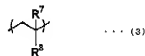
Feature a: The presently claimed polarizer-protective film comprises an imide resin which includes: a repeating unit represented by General Formula (1); a repeating unit represented by General Formula (2); and a repeating unit represented by General Formula (3),



where each of R¹ and R² independently represents a hydrogen atom or an alkyl group having 1 to 8 carbon atoms, and R³ represents a hydrogen atom, an alkyl group having 1 to 18 carbon atoms, a cycloalkyl group having 3 to 12 carbon atoms, or an aryl group having 6 to 10 carbon atoms,



where each of R⁴ and R⁵ independently represents a hydrogen atom or an alkyl group having 1 to 8 carbon atoms, and R⁶ represents an alkyl group having 1 carbon atom,



where R⁷ represents a hydrogen atom or an alkyl group having 1 to 8 carbon atoms, and R⁸ represents an aryl group having 6 to 10 carbon atoms, and

wherein the imide resin does not include a repeating unit represented by General Formula (2) where R⁸ represents a hydrocarbon group having 2 or more carbon atoms.

Feature b: A content of the repeating unit represented by General Formula (3) ranges from 5 wt% to 50 wt % with respect to an amount of total repeating units of the imide resin.

Feature c: A thickness of the polarizer-protective film falls within a range from 20 μm -300 μm .

Feature d: An orientation birefringence of the imide resin ranges from -0.1×10^{-3} to 0.1×10^{-3} .

Feature e: A photoelastic coefficient of the imide resin is not more than $10 \times 10^{-12} \text{ m}^2/\text{N}$.

In the presently claimed polarizer-protective film, the repeating unit represented by General Formula (1) and the repeating unit represented by General Formula (3) are copolymerized as indicated in Feature a. This intends to adjust the orientation birefringence of a film as a whole to a value within the range of Feature d by copolymerizing (i) the repeating unit (glutarimide structural unit) represented by General Formula (1), the repeating unit mainly having a positive orientation birefringence, with (ii) the repeating unit represented by General Formula (3), the repeating unit having a negative orientation birefringence. In other words, the subject matter of claim 27 of the present application has the feature that the repeating unit represented by General Formula (3) is copolymerized with the respective repeating units represented by General Formulae (1) and (2) so that the orientation birefringence of a film as a whole is adjusted as defined in Feature d. This feature is disclosed in, for example, the specification as originally filed, page 41, lines 11-15 (paragraph [0105] of the corresponding International Publication).

In contrast, Yano discloses, as illustrated in the claims and column 7, lines 37-39, *blending* the thermoplastic resin (A) (corresponding to the repeating unit represented by General Formula (1) of the present application) with the thermoplastic resin (B) (corresponding to the repeating unit represented by General Formula (3) of the present application) in order to adjust the orientation birefringence of a film as a whole. In other words, Yano possesses the feature that the thermoplastic resin (A) having a positive orientation birefringence is blended, but not copolymerized, with the thermoplastic resin (B), having a negative orientation birefringence so that the orientation birefringence is adjusted. This feature is disclosed in, for example, Preparation Examples 1 and 2 in column 19 of Yano. Thus, Yano cannot render obvious the presently claimed invention.

The Examiner has asserted that "Yano...teaches that the thermoplastic resin A...that is copolymer comprising repeating units that read upon instantly claimed formula (1) and instantly

claimed formula (2) that may further comprise other monomers including styrene which reads upon instantly claimed formula (3).” See Advisory Action dated August 8, 2011, page 2.

However, as discussed above, while the presently claimed invention and Yano may both intend to adjust the orientation birefringence of a film as a whole, they differ greatly from each other in how each achieves said intention. Thus, the disclosure of Yano, even in view of JP ‘904, does not render obvious the presently claimed invention. The presently claimed invention possesses the feature of copolymerizing the repeating unit represented by General Formula (1) with the repeating unit represented by General Formula (3), whereas Yano simply blends the thermoplastic resins (A) and (B) instead of copolymerizing them. Thus, the presently claimed invention is unobvious over the cited art.

Yano does not disclose, teach or suggest at least the technical feature of the presently claimed invention that the repeating unit represented by General Formula (1) and the repeating unit represented by General Formula (3) are copolymerized so that the orientation birefringence is adjust to fall within the range of Feature d. This deficiency is not overcome by JP ‘904.

Since the presently claimed invention and Yano differ greatly from each other in terms of technical feature, as discussed above, a skilled artisan could not, even based on the disclosure of Yano, achieve the presently claimed invention, which copolymerizes particular constitutional units in order to adjust the orientation birefringence of a film as a whole. At least this feature is also neither taught nor suggested in JP ‘904, serving as a secondary reference. Thus, the presently claimed invention is not rendered obvious by the combination of Yano and JP ‘904.

The Examiner has further rejected claim 27 of the present application as being obvious over Yano, which allegedly discloses the following:

- (i) The “olefin-maleimido copolymer” as the thermoplastic resin (A) can include styrene and the like at a percentage of 50 mole % or less (column 6, lines 11-24).
- (ii) The thermoplastic resin (A) may be a “glutar imido based resin” (column 6, lines 32-39).

However, this is an erroneous indication.

Specifically, the “olefin-maleimido copolymer” and the “glutar imido based resin” differ greatly from each other, at least in terms of structure. Thus, even in reference to a description that the “olefin-maleimido copolymer” can include repeating units of a vinyl based monomer such as styrene, a skilled artisan would not and cannot think of similarly including repeating units of a vinyl based

monomer in the “glutar imido based resin,” which differs greatly from the “olefin-maleimido copolymer”, at least in terms of structure. Thus, Yano cannot render obvious the presently claimed invention.

In addition, since the “olefin-maleimido copolymer” and the “glutar imido based resin” differ greatly from each other in terms of structure, they also differ from each other in terms of degree and nature of causing a positive orientation birefringence. Thus, a skilled artisan would not include repeating units of a vinyl based monomer in the “glutar imido based resin” at a proportion equal to the proportion for the “olefin-maleimido copolymer.” This deficiency is not overcome by JP ‘904.

As discussed above, Yano lacks at least the technical feature of copolymerizing the thermoplastic resin (A) with repeating units of a vinyl based monomer in order to control the orientation birefringence of a film as a whole. Yano does not provide any reason or motivation for copolymerizing repeating units of a vinyl based monomer with the “glutar imido based resin.” These deficiencies are not overcome by JP ‘904.

A skilled artisan at the time of invention would not have considered it obvious to achieve the presently claimed invention, in view of the disclosure of Yano and JP ‘904. Furthermore, combining Yano with JP ‘904, which merely discloses the composition of a resin, does not render the presently claimed invention obvious. As set forth above, the Examiner has not established a factual or legal basis to render the presently claimed polarizer-protective film obvious.

Respectfully submitted,

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